

CLAIMS

1. Water evaporative air conditioner for vehicle cabins and the like, of the type including an evaporation chamber (1) in which mist-forming means (4) are provided, air being delivered into said evaporation  
5 chamber (1) with a view to being directed towards said cabin via an air outlet (6), while passing through at least one wet filter (5), characterised in that it includes deflector means (3), (31) making it possible to cause said delivery air and said mist to converge  
10 towards run-off means provided in the vicinity of said wet filter (5), with the result being that the droplets of water formed by the mist are directed towards the surface of said filter (5) facing the inside of said evaporation chamber (1), and run off over this surface.

15 2. Air conditioner of claim 1, characterised in that said wet filter (5) is made of a hydrophilic material.

3. Air conditioner as claimed in one of claims 1 and 2, characterised in that said run-off means include  
20 at least one impact lip (71) for said droplets, extending into the upper portion of said wet filter (5) in a plane substantially coincident with the plane of said surface of said filter turned towards the inside of said chamber.

25 4. Air conditioner of claim 3, characterised in that said lip (71) is formed by a fold made in a plate (7), referred to as a drop-out plate, fastened beneath a closing cover for said evaporation chamber (1).

5. Air conditioner of claim 4, characterised in that said drop-out plate (7) has a raised portion or profile designed to evenly distribute the water over said lip.

5        6. Air conditioner as claimed in any of claims 1 to 5, characterised in that it includes a deflector plate (31) running in line with a delivery air distribution box (3).

7. Air conditioner of claim 6, characterised in  
10 that said deflector plate (31) contains perforations (32) and/or a cut-out section (33) in upper edge.

8. Air conditioner as claimed in one of claims 6 and 7, characterised in that said mist-forming means (4) include at least one injector positioned in  
15 relation to said deflector means (3), (31) such that said injector or injectors expel the water in a direction that, in the area of said run-off means, converges with the airflow at the outlet of said deflector means.

20        9. Air conditioner as claimed in any of claims 1 to 8, characterised in that said chamber (1) includes at least two drain-off points (10) for the condensed water, which are paired with extracting means.

10. Air conditioner as claimed in any of claims 1  
25 to 9, characterised in that said chamber has a bottom provided with lining means including at least one of the means belonging to the following group:

- covering with a material (8) including a plurality of tubes joined to one another  
30 or intercommunicating cells;

- a profiling (9) having water pass-through means.

11. Air conditioner of claim 10, characterised in that a pad made of a soft foam material is interposed  
5 between said covering (8) and the bottom of said chamber (1).

12. Air conditioner of claim 10, characterised in that the profiling (9) has at least one of the means belonging to the following group:

- 10 - a water pass-through opening;
- a space formed in relation to the bottom and/or walls of said chamber;
- an upper lip (93) extending said profiling.

15 13. Air conditioner as claimed in any of claims 9 to 12, characterised in that said extraction means are connected to a water reservoir (11) and in that a valve (116) makes it possible to shift between two configurations:

- 20 - a recycling configuration in which the water recovered by said extraction means is redirected towards said reservoir;
- a discharge configuration in which the water recovered by said extraction means  
25 is discharged as waste water.

14. Air conditioner as claimed in any of claims 1 to 13, characterised in that it includes wetting means (51) built into said wet filter (5).

15. Air conditioner of claim 14, characterised in  
30 that said wetting means include a circulating system made of a porous material.

16. Vehicle whose cabin is equipped with a water evaporative air conditioner, of the type including an evaporation chamber (1) in which mist-forming means (4) are provided, air being delivered into said evaporation  
5 chamber (1) with a view to being directed towards said cabin via an air outlet (6), while passing through at least one wet filter (5), characterised in that it includes deflector means (3), (31) making it possible to cause said delivery air and said mist to converge  
10 towards run-off means provided in the vicinity of said wet filter (5), with the result being that the droplets of water formed by the mist are directed towards the surface of said filter (5) facing the inside of said evaporation chamber (1), and run off over this surface.

15 17. Vehicle of claim 16, characterised in that said cabin (12) and/or said air conditioner include means of diffusing (121) the air coming from said air conditioner, making it possible to point at least one airflow into said cabin (12) directly towards at least  
20 one operator position.

18. Vehicle as claimed in one of claims 16 and 17, characterised in that said cabin and/or said air conditioner include means of slaving the flow rate of the air coming from said air conditioner to the  
25 pressurisation of said cabin, provided in such a way that the air flow rate varies inversely in relation to the variations in said pressurisation.

19. Vehicle as claimed in any of claims 1 to 18, characterised in that said slaving means also act on  
30 said diffusion means so that the air is pointed towards the operator when the pressurisation of said cabin

decreases, and is pointed in another direction when said pressurisation increases.

20. Cabin designed to be mounted on a vehicle equipped with a water evaporative air conditioner, of  
5 the type including an evaporation chamber (1) in which mist-forming means (4) are provided, air being delivered into said evaporation chamber (1) with a view to being directed towards said cabin via an air outlet (6), while passing through at least one wet filter (5),  
10 characterised in that it includes deflector means (3), (31) making it possible to cause said delivery air and said mist to converge towards run-off means provided in the vicinity of said wet filter (5), with the result being that the droplets of water formed by the mist are  
15 directed towards the surface of said filter (5) facing the inside of said evaporation chamber (1), and run off over this surface.